

What is claimed is:

1. A thin film deposition reactor comprising:

a reactor block comprising a wafer block on which a wafer is mounted;

a top lid for covering and sealing the reactor block;

5 a showerhead disposed under the top lid and connected to an RF power supply unit, the showerhead having first nozzles and second nozzles that are not combined with each other;

a showerhead isolation assembly having a plurality of gas curtain holes for forming a gas curtain around the wafer block, the showerhead isolation assembly for
10 isolating the top lid from the showerhead;

a top lid isolation flow line disposed on the top lid, the top lid isolation flow line having a first flow line and a second flow line, which are connected to the first nozzles and the second nozzles, respectively, and are each bent at a right angle at least once.

15 2. The reactor of claim 1, wherein the showerhead isolation assembly comprises:

a first showerhead assembly disposed between the top lid and the showerhead; and

20 a second showerhead assembly which encloses an outer circumference of the showerhead and has a plurality of gas curtain holes that are connected to a third flow line formed in the top lid.

25 3. The reactor of claim 2, further comprising a reactor block isolation flow line mounted on the reactor block, the reactor block isolation flow line having first, second, and third reactor flow lines, which are connected to the first, second, and third flow lines, respectively, and are each bent at a right angle at least once.

30 4. The reactor of claim 1, further comprising a circular pumping baffle that protects the inner surface of the reactor from erosive reaction gases and, together with the showerhead and the wafer block, defines a deposition space,

wherein the pumping baffle comprises a vertical portion disposed in an upper portion of the reactor block and a horizontal portion disposed in a lower portion of the reactor block and having pumping holes.

5. A thin film deposition reactor comprising:
a reactor block comprising a wafer block on which a wafer is mounted;
a top lid for covering and sealing the reactor block, the top lid having a
5 plurality of gas curtain holes for forming a gas curtain around the wafer block and a
third flow line connected to the gas curtain holes;
a showerhead disposed under the top lid and connected to an RF power
supply unit, the showerhead having first nozzles and second nozzles that are not
combined with each other and;
10 a showerhead isolation assembly for isolating the top lid from the
showerhead;
a top lid isolation flow line disposed on the top lid, the top lid isolation flow line
having a first flow line and a second flow line, which are connected to the first
nozzles and the second nozzles, respectively, and are each bent at a right angle at
15 least once.

6. The reactor of claim 5, wherein the showerhead isolation assembly
comprises:

a first showerhead assembly disposed between the top lid and the
20 showerhead; and

a second showerhead assembly that encloses an outer circumference of the
showerhead.

7. The reactor of claim 5, further comprising a reactor block isolation flow
25 line mounted on the reactor block, the reactor block isolation flow line having first,
second, and third reactor flow lines, which are connected to the first, second, and
third flow lines, respectively and are each bent at a right angle at least once.

8. The reactor of claim 5, further comprising a circular pumping baffle that
30 protects the inner surface of the reactor from erosive reaction gases and, together
with the showerhead and the wafer block, defines a deposition space,

wherein the pumping baffle comprises a vertical portion disposed in an upper
portion of the reactor block and a horizontal portion disposed at a lower portion of the
reactor block and having pumping holes.